MICHAEL A. LAZARO, PE

Atmospheric Sciences Section
Environmental Science Division
Argonne National Laboratory

Education:

M.S.	University of Illinois, Environmental Science & Engineering, 1973
M.S.	University of Illinois, Nuclear Engineering, 1972
B.S.	University of Illinois, Electronic Engineering, 1970\
	Atmospheric Sciences and Interdisciplinary Science-Policy Studies, Ph.D. Pre-candidacy, University of Chicago, 1982-1984

Professional Experience:

1984-Present: Atmospheric-Environmental Scientist/Project Manager
Environmental Science Division
Argonne National Laboratory, Argonne, IL

Principal investigator, project-team/discipline leader, and co-investigator for applied research in atmospheric sciences, emergency-response, consequence and risk assessment, vulnerability analysis, and the environmental assessment of numerous inter- and multi-disciplinary energy-environmental projects. As PI recently conceived, designed and carried out a comprehensive modeling study of the cumulative urban-valley and regional air quality involving multiple scales, pollutants, and sources with focus on population and transportation related growth tied to federal land-sale in the Las Vegas metropolitan area. As Co-PI, currently involved in the development of an RDD risk based model for use by emergency planners and first and post responder in the event of a "dirty bomb" attack in an urban center. The model is designed around a simple urban canopy sub-model along with sub-models for energetic events, wet and dry deposition, health physics, and economic damage.

A sample of recent project involvement with related vulnerability-consequence-risk assessment projects where I have made significant contributions include: the Assembled Chemical Weapons Assessments (Army), the Trans-Alaska Pipeline (TAPS) project (BLM), various projects/special task assignments under the PROTECT Program umbrella (DOE/FTA/DOJ/WMATA), the Mixed-Oxide Fuel Fabrication safety-consequence assessment (NRC), Risk Management Planning (Air Force, DOE), and National Ignition Facility environmental assessment (DOE). For PROTECT I participated in a security survey of a downtown multi-modal transportation complex and helped prepare recommendations to enhance physical security, add chemical-radiological-biological protective measures, and remove key access point entry vulnerabilities. I also investigated transit railcar engineering design for subway fleets in Washington D.C., Boston, Chicago, and New York. Study of the WMATA railcars was of particular value in support of subway field/laboratory experiments and flow simulations. This work and my involvement with transit officials aided in my contribution in developing protective measures and rapid response options during a chemical/biological attack to underground transportation systems. I contributed to the development of a major guidance document to transit managers for implementing these measures. For TAPS I lead the assessment of the Valdez Marine Terminal dike-terminal fire vulnerability analysis. Dynamic pool fire modeling was conducted to evaluate downwind environmental impacts and vulnerability to the marine terminal. Recommendations were made to as to what steps would be needed to reduce vulnerabilities. Finally, I participated in providing guidance to DOE and other federal facilities for compliance with EPA's chemical accident prevention and risk management program.

Major areas of expertise, capability and/or experience include: 1) chemical-petrochemical-petroleum facility consequence/vulnerability analysis and risk assessment, 2) WMD and industrial chemical air dispersion modeling, including dense vapor cloud effects, 3) transportation risk assessment, 4) atmospheric dispersion model development, evaluation and application, 5) air pollution meteorology, 6) integrated science-policy systems analysis (i.e., acid deposition science-policy assessments),7) Aeolian desert storm simulations, 9) source-receptor uncertainty analysis), 10) environmental terrorism critical infrastructure protection measures, 11) regulatory-policy analysis (i.e., toxic air pollutant control programs, air quality modeling guidance), and 12) environmental impact assessment.

Summary of Previous Experience:

1980-1984: MESOMET, Inc. and Department of Geophysical Sciences
University of Chicago, Chicago, Illinois

Director of air pollution meteorological services to government and private sector clients. Client consulting services included assessment of power plant and industrial source air quality impacts under the influence of coastal zone meteorological and long-range transboundary pollutant transport. Also provided analysis and interpretation of remote sensing data (e.g., satellite imagery) as it applied to understanding and quantifying movement of pollutants over large spatial scales. Member of research support team for the NSF funded field experiment on lake-effect snow over eastern shores of Lake Michigan. Other activities included project management, regulatory analysis, and marketing.

1973-1980: U.S. Environmental Protection Agency, Chicago, Illinois

Served as EPA Region V manager of the air quality modeling and technical support group and the Regional Meteorologist. Major activities centered on the management of air pollution engineering and meteorology programs used to formulate policy and support decisions. Established and directed interdisciplinary programs to address emerging environmental issues. Chaired a working group charged with the development of toxic air policy. Helped coordinate and prepare EPA's first Guideline on Air Quality Modeling. Supervised and directed the activities of a staff of 14 engineers, meteorologists and physical scientists.

Professional Accreditation and Affiliations:

Registered Professional Engineer, State of Illinois, License #062-040630

American Meteorological Society (AMS)
Air and Waste Management Association (AWMA)

- Secretary of the Accidental Release and Emergency Response Subcommittee
- Active member of the Meteorology, Policy Regulations and Strategies, Global Climate Change Impacts and Mitigation, and Toxic Substances Subcommittees Committees of AWMA

Professional Working Group and Board Memberships

DOE's SCAPA, Subcommittee on Consequence Assessment and Protective Actions
Member of the APAC Executive Committee – Three Working Groups, 1994-1997

Publications: Authored over 100 journal, book, report, and conference publications.